

# TENLEE ELECTRIC GROUP

**Power for a better world**  
TENLEE ELECTRIC GROUP



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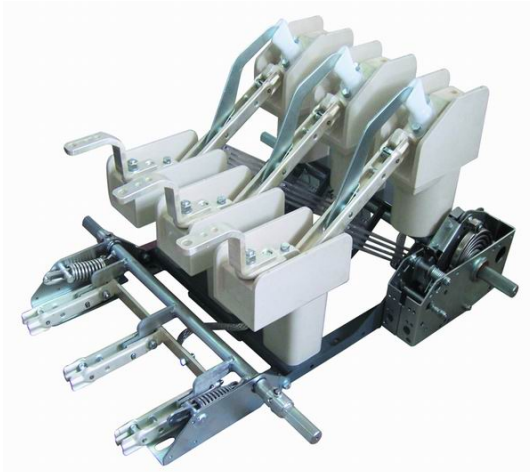


Reliable innovation. Reliable guarantee.

Air insulated switch  
disconnect  
Same as ABB NAL, NALF

- TNAL, TNALF
- up to 36KV
- up to 1250A

NAL,NALF



# Description General

TNAL air insulated switch disconnectors (load break switches) and TNALF fuse switch disconnectors (load break switches) are designed as key breaking elements for applications in air insulated switchgears and transformer compact substations.

Their unique electric arc extinguishing and high switching capacity designs enable them an attractive solution.

TNALF series combine advantages of switch disconnectors and fuses. They ensure control over the full range of overload and short circuit currents. They can be applied for switching and protecting distribution transformers, motors and capacitor banks.

TNAL and TNALF are confirmed by ISO9001 and well known around the world.

The TNAL/TNALF switch disconnector is based on a modular principle. The basic unit consists of a frame with insulators and current carrying parts. There are two different types of operating mechanisms: snap action mechanism type K or stored spring energy mechanism type A. The operating mechanisms can be mounted on the frame.

Fuse bases type F, with or without fuse tripping mechanism, and an earthing switch type E/EB, suitable for both direct mounting and free standing components, complete the basic equipment of a switch disconnector. These modules can be easily configured upon customer request.

Accessories, such as shunt trip, under-voltage release, auxiliary switches, motor operation and various systems for manual operation can easily be added.

# Standards

TNAL and TNALF complies with the following specifications  
DIN VDE and IEC 60129, 60265, 60694, GOST 1516.3-96,  
GOST 17717-79, and CSA Standard No.C22.2, No. 193,  
IEC62271-105 and ANSI No. C37.20.4  
All the above standards ensure safe switching operations  
between switch disconnecter and fuse.

# Main features

A TNAL disconnector (which interrupts load currents up to 1,250 A) and a small fault-current circuit combined with a fuse base (F) and current limiting fuses (which break large short-circuit currents) create a TNALF-type disconnector that provides protection against a majority of fault types in a modern electric network.

# Service conditions

Ambient temperature:

-Maximum +40 °C

-Minimum -15 °C

-Maximum daily average +35 °C

Humidity:

Daily average ambient air relative humidity ≤ 95%

average ≤ 90%

Saturated vapor pressure daily average ≤  $2.2 \times 10^{-3}$  Mpa

Altitude:

≤ 1000 M above sea level.

# Technical parameters

Rated voltage	kV	12	17.5	24	36	
Rated frequency	Hz	50/60				
Rated current	A	400/630/1250			630/800	
Lightning impulse withstand voltage	KV	Phase-phase/phase-earth	75	95	125	170
		Across isolating distance	85	110	145	195
1 min power frequency withstand voltage	KV	Phase-phase/phase-earth	42	45	55	80
		Across isolating distance	42	60	70	88
Rated short circuit making current (peak)	KA	67	50	50	50	
Rated peak withstand voltage	KA	82	82	82	66	
Short time withstand voltage	KA/S	31.5/1 25/2 20/3	31.5/ 1 25/2	31.5/ 1 25/2 16/3	25/2	
Rated active load breaking current	A	400/630/1250			630/800	
Max. breaking capacity in co-operation with fuses	A	1600	1600	900	300	
Mainly inductive breaking capacity $\cos\phi=0.15$	A	16	16	16	16	
Max fuse current	A	125	125	80	40	
Pole distance	mm	150, 170, 210	170, 210	170*, 235, 275	360	
Mechanical life	times	More than or equal to 2000				
Manual operation, manual operation with shunt, motor operation and motor operation with shunt are optional.						

\*with insulating barriers